1. In a data network, a method of determining the path of data conveyed on links between nodes of the network, comprising:

assigning to a network link a service weight and a restoration weight,

determining a service path of at least one link using the service weight,

determining a restoration path of at least one link using the restoration weight, and

transmitting the data in the network on at least one of the service and restoration paths.

2. A method of determining a path of a connection between at least two nodes in a SONET/SDH network comprising:

assigning to a network link a service weight and a restoration weight,

determining a service path of at least one link using the service weight,

determining a restoration path of at least one link using the restoration weight, and

transmitting information in the network on at least one of the service and restoration paths.

3. The method as recited in claim 1, further comprising:

assigning quality of service metrics to each network link, and eliminating links that do not meet the quality of service requirements.

4. The method as recited in claim 1, wherein said service path is used in provisioning service circuits in the network and said restoration path is used to restore at least one failed service circuit in the event of a network failure.

5. The method as recited in claim 1, wherein said determining step further comprises using the Dijkstra algorithm.

6. The method as recited in claim 1, wherein in said determining step, a service weight is assigned to each link to prioritize finding a shortest possible service path

and a restoration weight is assigned to each link to find a restoration path with the maximum available capacity.

7. The method as recited in claim 2, further comprising assigning quality of service metrics to each network link, and eliminating links that do not meet the quality of service requirements.

8. The method as recited in claim 2, wherein said service path is used in provisioning at least one service circuit in the network and said restoration path is used to restore at least one failed service circuit in the event of a network failure.

9. The method as recited in claim 2, wherein said determining step further comprises using the Dijkstra algorithm.

10. The method as recited in claim 1, wherein in said determining step, a service weight is assigned to each link to prioritize finding a shortest possible service path and a restoration weight is assigned to each link to find a restoration path with the maximum available capacity.